

## ARCTIC MODELING WORKSHOP: Understanding and Prediction

June 26, 2017

NASA Guest WiFi; User name: 76533902; Password: 27404367

[NASA Headquarters; Room 2E39, DC]

To join via a computer: [Join WebEx meeting](#)

Meeting number: 991 775 284; Meeting password: wEwWTp\*2

To join via phone: Dial: 1-844-467-4685; Passcode: 586247

1. Focus on Modeling – Successes, weaknesses, needs.
2. Seasonal to decadal variations/trends. Processes: chemistry, aerosols, clouds, radiation, sea-ice. Role of atmosphere and oceans. Subseasonal-to-seasonal predictions e.g., sea-ice extent, thickness. Arctic-midlatitude weather and circulation linkages. Detection and attribution. Gaps in modeling.
3. What are the Centers doing on this topic? Representation of Arctic physics, modeling of Arctic weather and climate, and model simulations.

7.45: Security. ID process. Badges.

8.25 – 8.50:

- [Welcome and Logistics](#) [V. Ramaswamy (NOAA/GFDL), D. Considine & E. Yoseph (NASA)]
- Introduction to the Workshop [G. Geernaert (DOE), V. Ramaswamy (NOAA/GFDL)]

### A. State of the Science, Understanding, Predictability, and Predictions

Moderators: J-F Lamarque (NCAR) and S. Bauer (NASA-GISS). Rapporteur: D. Barrie (NOAA/CPO)

8.50 – 10.10: [each presentation 20 minutes including 5 minutes for discussions]

*Scope:* Observed variations and changes. Seasonal prediction perspective – gaps, requirements. Decadal-scale perspective (variability and trends). Summertime Arctic ice features. Arctic reanalyses. Challenges in modeling the Arctic climate.

- M. Serreze (Natl Snow Ice Data Center): [Regional Sea Ice Predictability at Seasonal Time Scales and the Problem of Summer](#)
- B. Tremblay (McGill Univ): [Seasonal Forecasting of the Minimum Sea Ice Extent](#)
- C. Bitz (Univ. of Washington) (on webex/phone): [The First Decade of Seasonal Ice Predictions](#)
- D. Bromwich/ A. Wilson (Ohio State) (on webex/phone): [Modeling and Analysis of the Arctic Atmosphere by the Arctic System Reanalysis](#)

10.10 – 10.25: Break

## **B. Current Research and Modeling: Successes and Limitations, and Gaps**

Moderators: H. Tolman (NOAA/NWS) and R. Leung (DOE/PNNL). Rapporteur: F. Lipschultz (USGCRP)

10.25– 11.35: (each presentation 10 min including 5 min for discussions).

*Scope:* Gaps, limitations, 'low-hanging fruits'.

- [T. Ringler \(DOE/LANL\)](#)
- [R. Grumbine \(NOAA/NWS\)](#)
- [R. Cullather \(NASA-GMAO\)](#)
- G. Schmidt (NASA-GISS)
- [J-F. Lamarque \(NCAR\)](#)
- [M. Winton \(NOAA/GFDL\)](#)
- [S. Harper \(Navy\)](#)

Moderators: G. Schmidt (NASA-GISS) and D. Bader (DOE/LLNL). Rapporteur: D. Li (CICS, Princeton)

11.35 – 12.20: [each presentation 15 minutes including 5 minutes for discussions]

*Scope:* Arctic climate and variability, and mechanisms. Arctic sea-ice prediction skill. Arctic and midlatitude weather.

- [M. Bushuk \(NOAA/ GFDL\): Regional Arctic Sea Ice Prediction: Mechanisms, forecast skill, and future outlook](#)
- [J. Perlwitz \(NOAA/CIRES-CU\): Mechanisms for Linkages between Arctic Amplification and Mid-Latitude Weather, and their Representation in Models](#)
- [M. Patterson \(US CLIVAR\): Workshop on Arctic Change and Possible Influence on Mid-latitude Climate and Weather](#)

12.20 – 1.20: Lunch

## **C. Future Research & Modeling: Forming strategies based on the identified gaps in knowledge**

Moderators: S. Pawson (NASA-GMAO), V. Ramaswamy (NOAA/GFDL)

1.20 – 1.35: E. Hunke (DOE/LANL): [CICE Consortium](#) (10 min for talk, 10 min for discussions)

1.35 – 1.45: A. Bamzai (NSF): [IARPC](#) (7 min for talk, 3 min for discussions)

1.45 – 2.00: Setting the stage for the afternoon discussions

2.00 – 3.20: Break up into 3 groups. Identifying and framing the key issues.

- Group A [Discussion Leaders: T. Ringler (DOE/LANL) and W. Maslowski (NPS). Rapporteur: J. Fyke (DOE/LANL)] – *Modeling the Arctic processes*
- Group B [Discussion Leaders: M. Winton (NOAA/GFDL) and M. Cai (NSF). Rapporteur: H. Archambault (NOAA/CPO)] – *Arctic predictability*
- Group C [Discussion Leaders: R. Cullather (NASA-GMAO) and W. Wang (NOAA/NWS/CPC). Rapporteur: L. Andrews(NASA-GMAO)] - *Arctic reanalyses*
  
- Main Room 2E39: To join via a computer, the link is [Join WebEx meeting](#); Meeting number: 991 775 284; Meeting password: wEwWTp\*2
  - To join via phone: Dial: 1-844-467-4685; Passcode: 586247
  
- Breakout 1: Room MIC 5 (5H41): To join via a computer, the link is [Join WebEx meeting](#); Meeting number: 998 141 208 ; Meeting password: t3ZhSZX@
  - To join via phone: Dial: 1-844-467-6272 ; Passcode: 451829
  
- Breakout 2: Room MIC 7 (7H41): To join via a computer, the link is [Join WebEx meeting](#); Meeting number: 996 497 572 ; Meeting password: SwzV3Aw@
  - To join via phone: Dial: 1-844-467-6272; Passcode: 973645

3.20 – 3.40: Break

3.40 – 5.30: Plenary

[Summaries from Groups A, B and C by the Discussion Leaders and Rapporteurs](#). [10 minutes each]

Framing the Outcomes and Plans.

[Panel: A. Molod (NASA-GMAO), J. Dunne (NOAA/GFDL), A. Chawla (NOAA/NWS), G. Schmidt (NASA-GISS), W. Large (NCAR), D. Bader (DOE)]

**Questions for “Outcomes and Plans”:** What are the principal challenges for the models to address? How? What can the models accomplish in the next 3-5 years? What resources are needed? What additional observations may be required?